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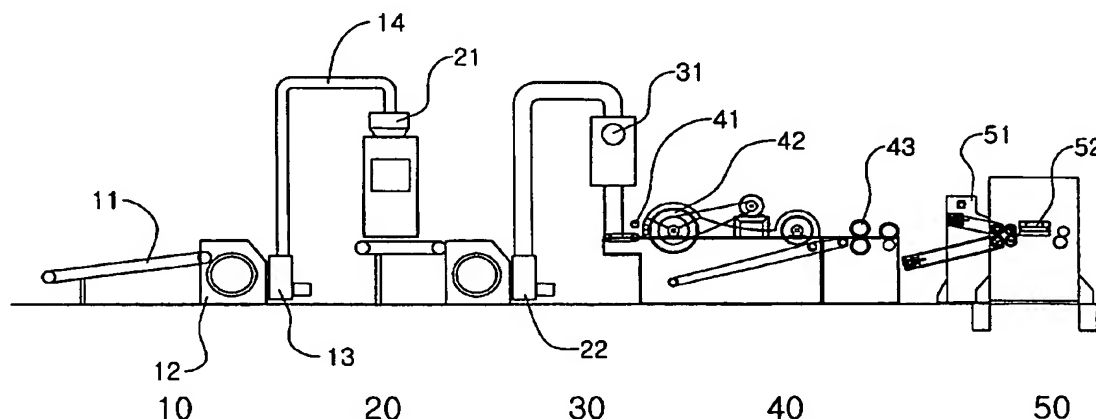
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(54) Title: APPARATUS FOR PROCESSING FIBER-REINFORCED COMPOSITES USING FIBER MAT AND ITS MANUFACTURE



(57) Abstract: Disclosed is a method of manufacturing a multifunctional fiber-reinforced composite using a composite fiber mat and an apparatus for manufacturing the same, in which at least two types of thermoplastic fiber and reinforcing fiber are used to manufacture a composite mat or a composite sheet, as well as a light adiabatic sheet having cells foamed due to inherent resilience of the reinforcing fiber while the composite sheet is compressed by rollers. The method includes fibrillating and combining the thermoplastic fiber and the reinforcing fiber to form the composite mat, dispersing and volatilizing the composite mat, and needle-punching the dispersed and volatilized composite mat. Then, the composite mat is subjected to preheating in a preheating zone, melting, compressing and molding in a compressing zone, and cooling in a cooling zone, to yield the composite sheet. Selectively, the composite sheet is re-heated to obtain a pseudo-foamed composite sheet by inherent resilience of the fiber.

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